
Making Plant-Support Structures From Waste Plant Fiber

John F. Kennedy Space Center, Florida

Environmentally benign, biodegradable structures for supporting growing plants can be made in a process based on recycling of such waste plant fiber materials as wheat straw or of such derivative materials as paper and cardboard. Examples of structures that can be made in this way include plant plugs, pots, planter-lining mats, plant fences, and root and shoot barriers. No chemical binders are used in the process. First, the plant material is chopped into smaller particles. The particles are leached with water or steam to remove material that can inhibit plant growth, yielding a fibrous slurry. If the desired structures are

plugs or sheets, then the slurry is formed into the desired shapes in a pulp molding subprocess. If the desired structures are root and shoot barriers, pots, or fences, then the slurry is compression-molded to the desired shapes in a heated press. The processed materials in these structures have properties similar to those of commercial pressboard, but unlike pressboard, these materials contain no additives. These structures have been found to withstand one growth cycle, even when wet.

This work was done by Robert C. Morrow, Matthew J. Mischnick, Amanda Pertzborn, and Chad Ehle of Orbital Technologies Corp.

*and John Hunt of the United States Department of Agriculture Forest Products Laboratory for **Kennedy Space Center**.*

In accordance with Public Law 96-517, the contractor has elected to retain title to this invention. Inquiries concerning rights for its commercial use should be addressed to:

Robert Morrow

Orbital Technologies Corp.

1212 Fowier Drive, Madison, WI 53717

Phone: (608) 827-5000

E-mail: morrowr@orbitec.com.

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